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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,227	06/04/2001	Daniel Reznik	GR 98 P 5874 P	4513

7590 08/14/2002

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EXAMINER
SOWARD, IDA M

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/873,227	Applicant(s) REZNIK, DANIEL	
	Examiner Ida M Soward	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-8* is/are pending in the application.

4a) Of the above claim(s) *7 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *06-04-2001* is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This Office Action is in response to the Election filed July 15, 2002.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muraoka et al. (5,324,966) in view of Harada et al. (US 6,278,140 B1) and Obinata (5,341,003).

Muraoka et al. teach a semiconductor component, comprising: a semiconductor body having: first and second main sides; four doped regions with conductivities having alternating signs formed one above another between the first and second main sides; a gate electrode **10** disposed on the first main side; a source contact **9**; a drain contact **1**; one of the four doped regions being a weakly doped first base region **5** having a conductivity type with an opposite sign with respect to the given conductivity type, the

second base region **7** being connected to the gate electrode, the second base region formed to control a channel formed in the second base region; two remaining regions of the four doped regions being respectively connected to one of the source contact and the drain contact; the source contact being disposed on the first main side; a buffer layer **3** being doped to have the given conductivity type, the buffer layer being disposed between the first base region and on of the two remaining regions connected to the drain contact; a further buffer layer **6** being doped to have the given conductivity type and being disposed between the first base region and the second base region; a third region **2** having a conductivity type opposite the given conductivity type and being connected to the drain contact; a fourth region **11** having the given conductivity type and being connected to the second base region; and the source contact being disposed on the first main side and being connected to the fourth region (Figure 1, cols. 7-8, lines 18-68 and 1-59, respectively). However, Muraoka et al. fail to teach a second base region extending as far as the first main side and a source contact being connected to a second base region. Harada et al. teach a second base region **15** extending as far as the first main side (Figure 1, col. 10, lines 30-67). Obinata teaches a source contact **S** being connected to a second base region **4** (Figure 1, col. 4, lines 43-68). In regard to the limitations concerning the dimensioned and magnitude of the doping of the buffer and further buffer layers, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 f.2d 1464, 1469, 15

USPQ2d 1525, 1528 (Fed. Cir. 1190). See MPEP § 2114. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the structure of Muraoka et al. with the second base of Harada et al. and the source contact of Obinata to reduce power loss.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respects to Insulated Gate Bipolar Transistors (IGBT):

Schlangenotto et al. (5,923,055)

Shinohe et al. (5,210,432)

Uenishi et al. (5,151,762)

Zhao (US 6,423,986 B1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ida M Soward whose telephone number is 703-305-3308. The examiner can normally be reached on Monday - Friday, 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 703-308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ims
August 8, 2002

CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800